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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/01/2001

Gopal B. Avinash

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12/13/2004

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EXAMINER

PATEL, SHEFALI D

ART UNIT

PAPER NUMBER

2621

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/682,934	Applicant(s) AVINASH, GOPAL B.	
	Examiner Shefali D Patel	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-5 and 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claims 4-5 and 13-14 recites the limitation "wherein regularizing" in line 2 of both claims 4-5 and 13-14. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4, 7, 9-11, 13, 16, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruijns et al. (hereinafter, "Bruijns") (US 5,974,113).

With regard to claim 1 Bruijns discloses a method of contrast matching a first image and a second image (col. 6 lines 35-47) comprising: generating an image ratio of the first image (S1) and the second image (S2) (obtaining ratio by using quotient unit 17 at col. 6 lines 64-67); filtering the image ratio to form a filtered ratio (using filter 19 at col. 7 lines 9-17); and multiplying the second image by the filtered ratio to form an adjusted image (multiplying image S2 by the quotient at col. 7 lines 15-23).

With regard to claim 2 Bruijns discloses a low pass filter 19 at col. 7 lines 9-17.

With regard to claim 4 Bruijns discloses forming an image ratio comprises forming an image ratio having a numerator and a denominator (quotient inherently has a numerator and a denominator) and wherein regularizing comprises adding a constant to the denominator (adding by adder 7 at col. 7 lines 17-23).

With regard to claim 7 Bruijns discloses multiplying the second image by the filtered ratio to form the adjusted image where the adjusted image is brightness matched to the first image (col. 7 lines 27-30 and col. 8 lines 46-53).

With regard to claim 9 Bruijns discloses prior to filtering, regularizing an image ratio of the second image with respect to the first image to form a regularized image ratio (col. 6 lines 52 to col. 7 lines 1-9).

Claim 10 recites identical features as claim 1 except claim 10 is a method claim of operating a digital image device. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 10. Applicant's attention is invited to Figures 2 and 3 of Bruijns. Bruijns discloses generating first (S1) and second (S2) digital image (col. 6 lines 15-17, Figure 1) and matching the second image to the first image (see, col. 6 lines 46-51).

Claim 11 recites identical features as claim 2. Thus, arguments similar to that presented above for claim 2 is equally applicable to claim 11.

Claim 13 recites identical features as claim 4. Thus, arguments similar to that presented above for claim 4 is equally applicable to claim 13.

Claim 16 recites identical features as claim 7. Thus, arguments similar to that presented above for claim 7 is equally applicable to claim 16.

Claim 18 recites identical features as claim 1 except claim 18 is a system claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 18.

Applicant's attention is invited to Figures 2 and 3 of Bruijns. Bruijns discloses a control unit 14 and a memory unit 41 in the system 40.

With regard to claim 19 Bruijns discloses a display 35 as seen in Figure 1, which is connected to a controller 14 included in element 40.

With regard to claim 20 Bruijns discloses a storage medium 41 as seen in Figure 2 and col. 7 lines 42-55.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 6, 8, 12, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruijns in view of Poland (US 6,080,107).

With regard to claim 3 Bruijns discloses a low pass filter as disclosed above in claims 1-2 and the arguments are not repeated herein, but are incorporated by reference. Bruijns does not expressly disclose a boxcar filter. Poland discloses a boxcar filter at element 90 in Fig. 1 and at col. 13 lines 37-46. Bruijns and Poland are combinable because they are from the same field of endeavor, i.e., image processing in medical imaging. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Poland with Bruijns. The motivation for doing so is to reduce noise content and improve its accuracy.

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Therefore, it would have been obvious to combine Poland with Bruijns to obtain the invention as specified in claim 3.

With regard to claim 6 Bruijns discloses the adjusted image is brightness matched to the first image as disclosed above in claim 7 and the arguments are not repeated herein, but are incorporated by reference. Bruijns does not expressly disclose the adjusted image is contrast matched to the first image. Poland discloses this at col. 11 lines 58-65 and col. 12 lines 21-34. Bruijns and Poland are combinable because they are from the same field of endeavor, i.e., image processing in medical imaging. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Poland with Bruijns. The motivation for doing so is to eliminate the radiation hazard and to determine the difference between the two images by analyzing contrast. Therefore, it would have been obvious to combine Poland with Bruijns to obtain the invention as specified in claim 6.

Claim 8 recites identical features as claims 6-7. Thus, arguments similar to that presented above for claims 6-7 is equally applicable to claim 8.

Claim 12 recites identical features as claim 3. Thus, arguments similar to that presented above for claim 3 is equally applicable to claim 12.

Claim 15 recites identical features as claim 6. Thus, arguments similar to that presented above for claim 6 is equally applicable to claim 15.

Claim 17 recites identical features as claim 8. Thus, arguments similar to that presented above for claim 8 is equally applicable to claim 17.

Allowable Subject Matter

5. Claims 5 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claims 5 and 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The closest prior art to Bruijns and Poland are directed to a method of contrast matching a first image and a second image as disclosed in an independent claims 1 and 10.

However, the closest prior art fails to disclose anything about forming an image ratio comprising forming an image ratio having a numerator and a denominator and wherein regularizing comprises multiplying the numerator by the second image and the denominator by the second image and adding a constant to the denominator as disclosed in claims 5 and 14. It is for these reasons in combination with all the other elements of the claim that claims 5 and 14 would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6,178,268 – method and apparatus for applying predetermined processing to an original image pixel by pixel.

JP 11-111795 – inspecting device for image-pickup element

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JP 10-198801 – picture quality improving method, edge intensity calculating method and device therefor.

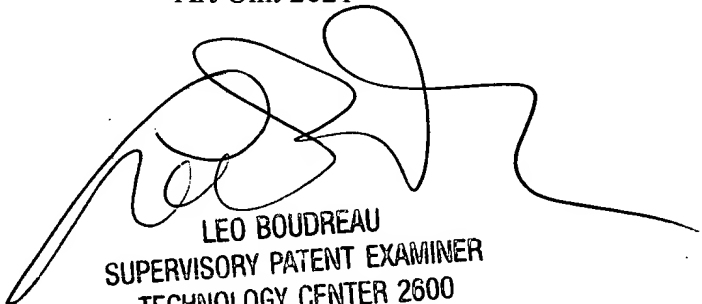
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D Patel whose telephone number is 703-306-4182. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

December 6, 2004

Shefali D Patel
Examiner
Art Unit 2621



LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
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